

## REMARKS

Applicants acknowledge with appreciation the Office's indication that claim 1 is allowable. Applicants also acknowledge with appreciation the Office's withdrawal of the objections to the claims and rejections under 35 U.S.C. § 101. Applicants also acknowledge with appreciation the Office's withdrawal of the rejection of claim 5 under 35 U.S.C. § 102(b) as allegedly being anticipated by Maruyama et al. (Marine Biology 128:705-711 [1997]) and Bowman et al. (Applied and Environmental Microbiology 63(8):3068-3078 [1997]). Applicants also acknowledge with appreciation the Office's withdrawal of the rejections of claims 2, 4, and 6 under 35 U.S.C. § 102(b) as allegedly being anticipated by Bowman et al. Applicants also acknowledge with appreciation the Office's withdrawal of the rejections under 35 U.S.C. § 102(a).

Upon entry of the present amendment, claims 1-23 are pending in the present application. Claims 1-7 and 10-23 are under consideration. Claims 8 and 9 have been withdrawn from consideration. In the present amendment, Applicants amend claims 2, 3, 5, 7, 10, 13, 16, and 18, and add new claims 19-23 as follows:

Applicants amend claim 2 to recite “[a] purified oligonucleotide probe, wherein the nucleotide sequence of the oligonucleotide probe consists of part of the base sequence of SEQ ID NO:1. . . .” Applicants amend claims 5 and 7 to recite “. . . wherein the nucleotide sequence of the oligonucleotide probe comprises part of the base sequence of SEQ ID NO:1. . . .” Applicants further amend claims 2, 5, and 7 to recite “. . . wherein the probe allows for species-specific detection or identification of one or more microorganisms selected from *Psychrobacter pacificensis* and/or *Psychrobacter glacincola*.” Support for these amendments is found in the specification, for example, at page 11, line 15 to page 12, line 28 (describing certain nucleotide

sequences of SEQ ID NO:1 that can be used as a probe to detect or identify microorganisms belonging to *Psychrobacter pacificensis* and *Psychrobacter glacincola*).

Applicants also amend claims 5 and 7 to recite “. . .obtaining a purified oligonucleotide probe from the obtained purified 16S rDNA. . . .” Support for this amendment is found in the specification, for example, at page 11, lines 6-23.

Applicants also amend claim 5 to recite “. . .permitting the probe to hybridize to DNA and/or RNA of the at least one bacterium,” and claim 7 to recite “. . .permitting the probe to hybridize under stringent conditions to DNA and/or RNA of the bacterium.” Support for these amendments is found in the specification, for example, at page 12, lines 18-21 (describing one example of a probe hybridizing to genomic DNA and RNA from a microorganism immobilized and fixed on a glass slide) and at page 12, lines 25-28 (describing one example of a probe hybridizing to microorganisms belonging to *Psychrobacter pacificensis* under stringent conditions).

Applicants amend claim 3 to recite “[t]he purified oligonucleotide probe according to claim 2, wherein the nucleotide sequence of the oligonucleotide probe comprises of the base sequence of SEQ ID NO:2.” Claims 10, 13, and 16 were each amended to delete the language “region specific . . .” and to add the language “nucleotide sequence of the oligonucleotide probe.” These amendments promote claim consistency.

Applicants also amend claim 18 to recite an oligonucleotide probe is “15-25 bp” in size. This amendment corrects an obvious error and is supported by the specification, for example, at page 11, lines 20-22.

Applicants also add new claim 19, which depends from claim 5, and is supported by the specification, for example, at page 12, lines 21-24 (describing one example of a probe

hybridizing to microorganisms belonging to *Psychrobacter glacincola* using moderate conditions).

Applicants also add new claims 20-23, which ultimately depend from claim 2. Support for these claims is found in the specification, for example, at page 11, line 28 to page 12, line 2.

Thus, the foregoing amendments and new claims do not add new matter.

**I. Rejection of Claims 2, 3, 4, 5, 6, 7, and 10-18 Under 35 U.S.C. § 112, Paragraph 2**

The Office rejected claims 2, 3, 4, 5, 6, 7, and 10-18 under 35 U.S.C. § 112, paragraph 2, as allegedly indefinite. Applicants respectfully traverse.

The Office stated that each of these claims recite or depend from a claim that recites “wherein the part of the base sequence of SEQ ID NO:1 is a region specific to the *Psychrobacter pacificensis* NIBH P2K6 strain.” Action at page 2. The Office further indicated that it is unclear what “specific” means in this context. Solely to expedite prosecution and without acquiescing to the Office’s arguments, Applicants have amended independent claims 2, 5, and 7 to recite “. . . wherein the probe allows for species-specific detection or identification of one or more microorganisms selected from *Psychrobacter pacificensis* and/or *Psychrobacter glacincola*.” Claims 3, 4, 6, and 10-18 ultimately depend from claim 2, 5 or 7. Thus, Applicants respectfully assert that this rejection is moot and respectfully request withdrawal of the rejection of these claims under 35 U.S.C. § 112, paragraph 2.

The Office alleged that claim 5 is further indefinite because it is not clear how the two obtaining steps are related. Action at page 3. Solely to expedite prosecution and without acquiescing to the Office’s arguments, Applicants have amended independent claim 5 to recite “. . . obtaining a purified oligonucleotide probe from the obtained purified 16S rDNA. . . .” Thus, it is clear that the obtained purified oligonucleotide probe is obtained from the 16S rDNA. In

addition, claim 5 has been amended to recite “. . . permitting the probe to hybridize to DNA and/or RNA of the at least one bacterium. . . .” Thus, it is clear that the probe is permitted to hybridize to DNA and/or RNA of the at least one bacterium. Therefore, Applicants respectfully assert that this rejection is moot and respectfully request withdrawal of this rejection of claim 5 under 35 U.S.C. § 112, paragraph 2.

The Office stated that “[c]laim 6 is further indefinite because it is not clear how the two obtaining steps are related.” Action at page 4. Claim 6 recites “[t]he purified oligonucleotide probe according to claim 2 or 3 for specifically detecting or identifying a bacterium belonging to *Psychrobacter pacificensis*.” Claim 6 does not recite obtaining steps. Accordingly, the basis for this rejection of Claim 6 under 35 U.S.C. § 112, paragraph 2 is not clear. Therefore, Applicants respectfully request withdrawal of this rejection of claim 6 under 35 U.S.C. § 112, paragraph 2.

It appears that the Office may have meant that claim 7, and not claim 6, “is further indefinite because it is not clear how the two obtaining steps are related.” Action at page 4. To the extent that the Office meant to allege that claim 7 is further indefinite, Applicants draw the Office’s attention to the fact that, like amended claim 5, amended claim 7 recites “. . . obtaining a purified oligonucleotide probe from the obtained purified 16S rDNA. . . .” Thus, it is clear that the obtained purified oligonucleotide probe is obtained from the 16S rDNA. In addition, claim 7 has been amended to recite “. . . permitting the probe to hybridize under stringent conditions to DNA and/or RNA of the bacterium. . . .” Thus, it is clear that the probe is permitted to hybridize to DNA and/or RNA of the bacterium. Therefore, Applicants respectfully assert that, to the extent the Office meant to allege that claim 7 is further indefinite instead of claim 6, such a rejection of claim 7, as currently amended, under 35 U.S.C. § 112, paragraph 2 would be improper.

## **II. Rejection of Claims 2-7 and 10-18 Under 35 U.S.C. § 112, Paragraph 1**

The Office rejected claims 2-7 and 10-18 under 35 U.S.C. § 112, paragraph 1, as allegedly not enabled for “oligonucleotides comprising fragments of instant SEQ ID NO:1 wherein the oligonucleotides are specific to the *Psychrobacter pacificensis* NIBH P2K6.” Action at page 5. In addition, the Office stated that these claims are also rejected for allegedly being indefinite. *Id.* The Office indicated that the rejection was based on a “potential interpretation of ‘specific’ which means that the claimed oligonucleotides must be ‘unique to’ and/or would detect only the recited *Psychrobacter* strain.” *Id.* Applicants respectfully traverse the “enablement” rejection and the “indefiniteness” rejection.

First, solely to expedite prosecution and without acquiescing to the Office’s arguments regarding indefiniteness, Applicants have amended independent claims 2, 5, and 7 to remove the term “specific.” Amended claims 2, 5, and 7 now include the new language “wherein the probe allows for species-specific detection or identification of one or more microorganisms selected from *Psychrobacter pacificensis* and/or *Psychrobacter glacincola*.” Claims 3, 4, 6, and 10-18 ultimately depend from claim 2, 5 or 7. This amendment was discussed above in the section addressing the rejections under 35 U.S.C. § 112, paragraph 2. Thus, as above, Applicants respectfully assert that the indefiniteness rejection is moot and respectfully request withdrawal of the rejection of these claims under § 112, paragraph 2.

Next, the Office alleged that claims 2-7 and 10-18 are not enabled under § 112, paragraph 1, based on an interpretation of “specific” meaning “that the sequence is unique to or would hybridize to only the strain recited in the claims.” Action at page 8. According to the Office, “with respect to the requirement that the probes claimed and used in the methods recited herein comprise a part of SEQ ID NO:1 that is specific to *P. pacificensis* NIBH P2K6, and insofar as

this requirement is intended to mean that the probes are unique to or would hybridize only to this strain, it would require undue experimentation to make and use applicants' invention in a manner reasonably commensurate with the instant claims." Action at pages 9-10. Applicants respectfully traverse this rejection.

Solely to expedite prosecution and without acquiescing to the Office's arguments, Applicants have amended independent claims 2, 5, and 7 to recite "...wherein the probe allows for species-specific detection or identification of one or more microorganisms selected from *Psychrobacter pacificensis* and/or *Psychrobacter glacincola*." Claims 3, 4, 6, and 10-18 ultimately depend from claim 2, 5 or 7. Thus, Applicants respectfully assert that this rejection is moot and respectfully request withdrawal of the rejection of claims 2-7 and 10-18 under 35 U.S.C. § 112, paragraph 1.

### **III. Rejection of Claims 2, 3, 4, 6, and 10 Under 35 U.S.C. § 102(b)**

The Office rejected claims 2, 3, 4, 6, and 10 under 35 U.S.C. § 102(b) as allegedly being anticipated by Pinhassi et al. (GenBank Accession AF025555, GI:2582456, dated November 2, 1997). Because Pinhassi fails to teach each and every element of the claims, this rejection is respectfully traversed.

The Office states that "Pinhassi et al. teach an isolated nucleic acid comprising part of the base sequence of SEQ ID NO:1." Action at page 10. The Office also states that "Pinhassi et al. teach a purified oligonucleotide probe which comprises part of the base sequence of SEQ ID NO:1, wherein the part of the base sequence of SEQ ID NO:1 is a region 'specific' to the *Psychrobacter pacificensis* NIBH P2K6 strain." Independent claim 2, however, recites "[a] purified oligonucleotide probe, wherein the nucleotide sequence of the oligonucleotide probe

consists of part of the base sequence of SEQ ID NO:1. . . .” Claims 3, 4, 6, and 10 each depend from claim 2.

Pinhassi et al. is a 300 nucleotide genomic DNA sequence described as a partial sequence from the *Psychrobacter glacincola* 16S ribosomal RNA gene. In contrast, SEQ ID NO:1 of the present application is a 1526 nucleotide sequence from *Psychrobacter pacificensis* strain NIBH P2K6. While the two sequences allegedly share a 300 nucleotide region of homology, Action at page 10, the Pinhassi et al. sequence does not consist of part of the base sequence of SEQ ID NO:1. As the Office acknowledged, “[i]nstant SEQ ID NO:1 in its entirety appears to be unique to *Psychrobacter pacificensis* strain NIBH P2K6.” Action at page 6. Moreover, the sequence alignment provided by the Office shows that the Pinhassi et al. sequence differs by at least one, and possibly two, nucleotides from a part of the base sequence of SEQ ID NO:1. *See* Sequence Alignment (2), nucleotide numbers 122 and 158 of Pinhassi et al. relative to SEQ ID NO:1 of the present application. Thus, the 300 nucleotide sequence of Pinhassi et al. does not consist of part of the base sequence of SEQ ID NO:1. Therefore, Pinhassi et al. does not teach an “oligonucleotide probe, wherein the nucleotide sequence of the oligonucleotide probe consists of part of the base sequence of SEQ ID NO:1.” Because Pinhassi et al. does not teach each and every element of independent claim 2, Pinhassi et al. does not anticipate this claim, nor does it anticipate any of claims 3, 4, 6, or 10, which depend from claim 2. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of these claims under 35 U.S.C. § 102(b).

#### **IV. Rejection of Claims 2, 4, 6, 11, and 12 Under 35 U.S.C. § 102(b)**

The Office rejected claims 2, 4, 6, 11, and 12 under 35 U.S.C. § 102(b) as allegedly being anticipated by Maruyama et al. (Marine Biology 128:705-711 [1997]) (“Maruyama et al-1”).

Because Maruyama et al-1 fails to teach each and every element of the claims, this rejection is respectfully traversed.

The Office states that Maruyama et al-1 discloses a universal primer for 16S rRNA, termed 27f, and alleges that “[i]t is an inherent property of this primer that it is a probe comprising ‘part of the base sequence of SEQ ID NO:1’” Action at page 11. Independent claim 2, however, recites “[a] purified oligonucleotide probe, wherein the nucleotide sequence of the oligonucleotide probe consists of part of the base sequence of SEQ ID NO:1. . . .” Claims 4, 6, 11, and 12 ultimately depend from claim 2.

Nowhere does Maruyama et al-1 teach a probe “wherein the nucleotide sequence of the oligonucleotide probe consists of part of the base sequence of SEQ ID NO:1.” As the Office noted, nucleotides 5-11 and 13-17 of the Maruyama-et al-1 probe are identical to nucleotides 1-7 and 9-13 of SEQ ID NO:1. Action at page 11. Therefore, the Maruyama et al-1 nucleotide sequence does not consist of part of the base sequence of SEQ ID NO:1. Accordingly, Maruyama et al-1 fails to teach each and every element of independent claim 2, and therefore does not anticipate claim 2. Claims 4, 6, 11, and 12 ultimately depend from claim 2 and are likewise not anticipated by Maruyama et al-1. Thus, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 2, 4, 6, 11, and 12 under 35 U.S.C. § 102(b).

**V. Possible Objection to Claim 10 Should Claim 3 be Found Allowable**

The Office advised that should claim 3 be found allowable, claim 10 would be objected to under 37 C.F.R. § 1.75 as being a substantial duplicate thereof. The Office stated that “[w]hen two claims in an application are duplicates or else are so close in content that they both cover the



same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other.” Action at page 14.

Applicants respectfully draw the Office’s attention to the M.P.E.P. § 706.03(k) at 700-69, where it states that “court decisions have confirmed applicant’s right to restate (i.e., by plural claiming) the invention in a reasonable number of ways. Indeed a mere difference in scope between claims has been held to be enough.” Applicants assert that claim 10 is different in scope from claim 3 and is not a substantial duplicate thereof.

Claim 3 is drawn to an oligonucleotide probe comprising the base sequence of SEQ ID NO:2. The sequence listing indicates that SEQ ID NO:2 is 5’-TAATGTCATCGTCCCCGGG-3’. Claim 10 is drawn to an oligonucleotide probe comprising nucleotide nos. 458 to 476 of the nucleotide sequence of SEQ ID NO: 1. The sequence listing indicates that this sequence is 5’-CCCGGGGACGATGACATTA-3’. While an examination of the two sequences reveals that SEQ ID NO:2 is the complement of nucleotides 458 to 476 of SEQ ID NO:1, Applicants assert that the two sequences are different in scope from each other. For example, a single-stranded oligonucleotide probe comprising SEQ ID NO:2 would be capable of hybridizing to plus-stranded RNA, yet a single-stranded oligonucleotide probe comprising nucleotides 458 to 476 of SEQ ID NO:1 would not. Accordingly, claim 10 is different in scope from claim 3 and thus, claim 10 is not a substantial duplicate of claim 3. Thus, Applicants respectfully assert that an objection of claim 10 under 37 C.F.R. § 1.75, if claim 3 is found allowable, would be improper.

### CONCLUSION

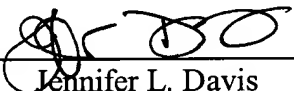
In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims. If the Examiner does not consider the application to be allowable, the undersigned requests that, prior to taking action, the Examiner call her at (650) 849-6749 to set up an interview.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account 06-0916.

Respectfully submitted,

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